EFFECTIVE VOTING.

AN EXPLANATION OF THE BALLOT REFORMS USUALLY KNOWN AS "PREFERENTIAL VOTING" AND "PROPORTIONAL REPRESENTATION."

By C. G. Hoag.

INTRODUCTION—THE TWO OBJECTS OF VOTING.

Many of the gravest evils of our politics in local, State, and Federal Government are due in a considerable degree to our failure hitherto to grasp the distinction between the two fundamentally different objects of voting and to adopt the right sort of ballot for carrying out each.

One of the objects to be carried out by voting is *to make decisions* either between policies (measures) or between candidates for administrative positions. For that object majority voting is obviously required by the fundamental principles of democracy.

The other object to be carried out by voting is *to make up a deliberative body* fit to make decisions—subject or not to the operation of the initiative and the referendum—on behalf of all the people. Now, though the principles of democracy require that the decisions made in such a body should be made by majority voting, they by no means require that the body itself should be made up by majority voting. In making up such a body, as has been recognized universally— though till recently very confusedly—each member's right to a seat should rest on his being the choice, not of a majority of all the voters represented by the body, but merely of such part of them as we call a "constituency."

This fundamental distinction between the two objects of voting is the secret of fundamental electoral reform. It reveals to us in what cases rational reform means replacing a plurality system by a majority system and in what cases it means replacing our present constituency system, under which a member of a deliberative body is elected by a plurality of a constituency, not by a majority-of-a-constituency system but by a unanimous-constituency or "proportional" system.

Plurality voting should be replaced by majority voting wherever, as I have said, a decision is to be made. That means wherever measures are voted on in deliberative bodies, wherever measures are voted on directly at the polls, and wherever administrative officials are selected or removed by deliberative bodies or are elected or recalled at the polls.[1]

Whenever the object of an election is to make up a body fit to make decisions or choose administrative officers, our present system of voting in fixed arbitrary constituencies should be replaced by a rational constituency system in which neither pluralities nor majorities have any place.

[1] But see passages in Part II where it is suggested that such officials should not be elected at the polls at all.

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Part I.

MAJORITY VOTING—COMMONLY CALLED "PREFERENTIAL VOTING."

That the ballots should reveal the will of the majority except when their object is the election of a decision-making body is obviously of considerable importance. And in order that they may reveal that will, they must give the voters the opportunity to express their will so fully that the will of the majority can be learned from them no matter how many the competing policies or candidates may be or what the grouping of the voters at the particular election in question.

Ballots that allow such an adequate expression of the voter's will with this object in view have usually been called "preferential ballots," and the systems of applying them have usually been called systems of "preferential voting." Those names, however, are ambiguous, for giving the voter an opportunity to express several preferences on the ballot is also a feature of the Hare system of voting to make up a representative body. I have thought it best, therefore, to call such ballots *majority ballots* and such a system *majority voting*.

Electoral systems designed to reveal the will of the majority by a single election are in use for final elections in Queensland, Victoria, and Western Australia, Grand Junction (Colorado), Spokane (Washington), and elsewhere, and for primary elections in Wisconsin, Minnesota, North Dakota, and possibly elsewhere.

In respect to these systems two criticisms must be made. The first concerns their application: They are applied, in the places mentioned, not only to the election of administrative officials, where majority voting is desirable, but to the election of deliberative bodies, where majority voting, as I have said and as everybody who understands proportional representation knows, is absolutely out of place. The second criticism concerns the systems themselves: Every one of them is defective—that is, every one of them may fail to reveal the will of the majority truly.

Leaving the point raised by the first of these criticisms to be covered later in this paper, I propose to discuss briefly now the defects of these systems, to explain a system that lacks those defects, and to consider the whole problem in its practical aspects.

The system used in Queensland and that used in Wisconsin and Minnesota are different modifications of the more complete and less defective Ware system. Without discussing the defects of the modifications, therefore, which were injudiciously devised to simplify the Ware system, let me explain the latter sytem itself, which is used in Western Australia.

Under the Ware system the voter is allowed to indicate his preference among the candidates—as many preferences as he pleases—by putting the figure 1 opposite the name of his first choice, the figure 2 opposite the name of his second choice, and so on. "The first [1] count is only of the first choice votes. If no candidate has a majority, the lowest candidate is excluded and *his votes only* are scrutinized again and added to the votes of the other candidates as the preferences indicate. The candidates are thus successively excluded until only two are left, of whom the higher will have a majority

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[1] The uncredited quotations in this paper are from a valuable paper on "Preferential Voting" in Equity July 10, 1910, by William Hoag, of Boston, Mass., then Secretary of the American Proportional Representation League.

vote and be elected." The defect of this Ware system, which is shared by the more defective modified forms of it mentioned, consists in the fact that a candidate who, according to the ballots as marked, is really preferred by the majority to any other of the candidates, taken singly, may *possibly* be dropped after one of the counts because at the bottom of the poll then, when his real strength is not completely revealed.

The system of majority voting used, in slightly different forms, in Grand Junction, Spokane, and elsewhere is distinctly different from those on the Ware principle. It offers the voter an opportunity of indicating on the ballot his first choice (by a cross in a square opposite the name), his second choice (by a cross in a second square opposite the name), and his "other choices" (by crosses in a third column of squares opposite the names). Following is a ballot marked correctly by a voter whose first choice is D, whose second choice is B, and whose "other choices" are A and G.

	First choice.	Second choice.	Other choices.
A			X
B		X	
C			
D	X		
E			
F			
G			X

The rules for counting the votes under this system, as used in Grand Junction, are substantially as follows: "A count is first taken of first choices. If no candidate has a majority, the candidate lowest on the first count is excluded and a second count is taken of all the ballots, counting first and second choices for the remaining candidates. The highest candidate at this count is elected if he has a majority of all the ballots. But if no candidate receives such a majority, the candidate having the smallest number of first and second choice votes is excluded and a third count is taken of first, second," and other choices. The candidate having the most votes on this third count wins.

The rules of counting the ballots in Spokane differ from those in Grand Junction in one respect: In Spokane, when the second or the third count is made, there is no dropping of the candidate who stands lowest on the preceding count. This is unquestionably an improvement, for the dropping of the lowest man, though necessary in systems of the Ware type, is not necessary at all in this one.

Considering this system, then, only in the better form in which it has been adopted, that of Spokane, we have to ask whether it is or is not defective. Is it sure, in other words, to reveal the will of the majority truly? Is it not. The reasons are to be found in two de-

fects.   The first may be described as that of letting a voter's second choice completely offset or neutralize his first choice, so far as the relative standing of those two candidates on the second count is concerned, as certainly happens at the second count under this system, or of letting his third choice offset or neutralize his first and his second, so far as the relative standing of those three candidates on the third count is concerned, as certainly happens at the third count under this system, etc.   The second defect is allowing "other choices" lower than third choices to be taken into account before it is found out whether some candidate has not a majority when only first, second, and third choices have been taken into account.

The first of these defects is inherent in this system.   To get rid of it, in other words, would mean abandoning the system altogether. The question arises, then, how important, practically, this defect really is.   From the point of view in my explanation of it above it seems gross.   And there is no question but that it may, like the inherent defect of the Ware system—the dropping of the lowest man—bring about an erroneous result.   But, on the other hand, if considered from another point of view, it does not look quite so bad.   Though it is true that my second-choice mark on the ballot does completely neutralize my first-choice mark, so far as the relative standing of those two candidates on the second count is concerned, it is true also that the two marks help on that count *both* those candidates *as against all the rest.*   To mark a candidate as second choice under the Spokane system, then, means helping the candidate thus marked in case no candidate gets a majority on the first count, and in that case only, equally with the candidate marked as first choice as against all the rest on the ballot.   It is therefore only in case the struggle for the office turns out to be between the candidate of my first and the candidate of my second choice, and is not settled until the second or a subsequent count, that my marking the candidate of my second choice will prove to have tended to thwart my will.   The defect is considerable, but its importance can easily be overestimated; it does not prevent the Spokane system from being a vast improvement on plurality voting for all elections whose object is the making of decisions.

The second defect of the Spokane system can easily be eliminated, and in my opinion it should be.   The excuses for its presence in the system are three: First, it is argued that for most voters the designating of the exact order of preferences below the second is impossible. Secondly, it is argued that all that the voter needs, beyond the opportunity to record his first and his second preference, is the opportunity to vote *against* the candidates whom he regards as positively objectionable, and that this last opportunity is given him by the "other choice" column of squares.   Thirdly, it is argued that it would encumber the ballot to put on it more than three columns of squares.

The third of those arguments can be met by saying simply that the form of the ballot and the method of indicating preferences should be the same under the Spokane system as under the Ware; in other words, that there should be but one column of squares and that the voter should be asked to record his preferences in that column by the figures 1, 2, 3, etc.   This method is supposed to be difficult for the voters only by those who have never seen it in use.   In fact it is

not difficult at all, even to voters of little education. On this point there is conclusive evidence. See the testimony of Earl Grey,[1] recently Governor General of Canada, before the Royal Commission on Systems of Election, and that of the Hon. John McCall,[2] agent general of Tasmania (where the method mentioned is used in connection with proportional representation) before the same commission.

The first and the second of the excuses reveal a failure to appreciate the fundamental importance, in the long run, of giving the voter at least the opportunity of expressing his will *fully*. *Any* restriction of the voter's freedom to express his will fully not only may but must result in a transfer of political power from the voters, who should have it all, to somebody else to whom chance or shrewdness delivers it. Any such restriction, therefore, is a vitiation of democracy at the fountain head. Moreover, the idea that there is sure to be a longer gap, in the voter's opinion, between his third choice and his fourth—or between his sixth and his seventh, for that matter—than between his first and his second is a mere assumption and in fact is not true. The writer happened to be arguing this point about the time of the national party conventions of 1912 with a man of Democratic and Progressive tendencies, who insisted that there was sure to be a longer gap between a voter's first choice and his second than between two choices lower down in his scale. When, however, I mentioned the names of the principal aspirants for the Presidency, and asked him where, in his own list of preferences among those aspirants, the big gap came, he admitted in an instant that it came between the fourth one and the fifth. A system of voting based on what voters "aren't intelligent enough to do" or "probably don't want to do anyway" is not a system that will prove satisfactory in the long run. What we must come to in the end is a system that permits the voter to express his will *as fully as he wants to*.

To improve the Spokane system, then, provide only one column of squares for the voter's marks, and let him indicate his preferences— as many or as few as he pleases—by the figures 1, 2, 3, etc., thus:

A..............................	3
B..............................	2
C..............................	
D..............................	1
E..............................	
F..............................	
G..............................	4

Then take into account only first, second, and third choice votes on the third count; only first, second, third, and fourth choice votes on the fourth count; and so on. With those improvements the Spokane system will be at its best, with only the one defect that I have mentioned as inherent in it.

The question now arises: Is there not some system of voting by which the will of the majority can be determined by a single balloting with absolute certainty? There is. It is known as Nanson's method,

[1] P. 183 of the British Government Blue Book, entitled Minutes of Evidence taken before the Royal Commission on Systems of Election. The Blue Book is numbered "ed. 5352," London, 1910. Price, 1s. 8d.
[2] P. 188 of the same Blue Book.

because invented by Prof. E. J. Nanson, of the University of Melbourne, Australia, and it is explained and defended by him on pages 121–141 of the Blue Book of the British Government entitled "Reports from His Majesty's Representatives in Foreign Countries and in British Colonies Respecting the Application of the Principle of Proportional Representation to Public Elections." [1]   With this method is used the same preferential method of voting that is used with the Ware method and that I have advocated for use with the Spokane method.   In the count a—

first choice is counted one, a second choice two, a third choice three, and so on, as far as choices are indicated; all other candidates are given a number one greater than the number given the last choice of the voter.   The additions are then made and all candidates excluded whose total is more than the average.   Another scrutiny is then taken of all the ballots to ascertain the order of preference of the remaining candidates, another similar count made, and all above the average excluded again.   This process is continued until only one candidate remains, and he is elected.   The successful candidate will almost always be the choice of a majority of the voters over each of the other candidates, and, if not, he will be the choice either over more candidates than any other, or, if only the choice over an equal number, he will be preferred to those others by a greater majority or judged inferior by a smaller.   In short, all that can be accomplished by a comparison two by two—

That is, a comparison of every candidate with every other taken by himself—

can be accomplished by this abbreviated method of Nanson's.   The method may therefore safely be regarded as a complete solution of the problem of ascertaining the will of the majority.   *   *   *   The voting is simplicity itself, but the counting is often more tedious than with Ware's method because all the ballots have to be scrutinized at every count.   The number of counts required is controlled by the number of candidates.   Four candidates might make two counts necessary, 8 candidates three counts, 16 candidates four counts, 32 candidates five counts, and so on, one additional count being possibly necessary for every doubling of the number of candidates.   *   *   *   It should be realized, however, that each count accomplishes all that could be accomplished by holding another election; and it will not be questioned that another count is far simpler and less expensive than another election.

We have now considered three methods of voting designed to reveal the choice of the majority among several candidates (or measures) by means of a single balloting.   Let us now review comprehensively the points of likeness and those of difference between them.

The three systems all differ from the nonpreferential voting hitherto common in this country in that they give the voter the opportunity of recording not merely one single desire—the desire to support a certain candidate (or measure), *but as much of his will as he cares to express in respect to where his support is to go under the various circumstances that may be found to have arisen when the ballots begin to be counted.*   In other words, they all differ from the nonpreferential system in that they give the voter not merely the privilege of casting a ballot, but the privilege of *making it effective.*

The three systems are not necessarily different in respect to the method by which the voter records his will on the ballot.   For the Ware and Nanson systems provide for the indication of the voter's preferences by means of the figures 1, 2, 3, etc.; and the Spokane system, as I have said, could and should be changed so as to do so.

The only essential difference between the three systems, then, is the rules for counting the ballots—that is, for deducing from them what is to be regarded as the will of the majority.

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[1] London, 1907.   Price, 1s. 3d.   This Blue Book is designated "Miscellaneous No. 3 (1907)."   The inclusion of such a paper in a batch of reports on proportional representation is an example of the common confusion of that system with the use of a preferential ballot for majority voting.   The confusion was not Prof. Nanson's, of course, but that of some Government official.

I have already said that, so far as insuring a correct result is concerned, the Ware and Spokane rules are fallible and the Nanson system infallible.   Let me now support that assertion by a concrete example, taken from the Equity article by Mr. William Hoag referred to above.

Suppose A, B, C, D, and E are candidates for a single office that is to be filled by majority vote, and suppose the ballots cast in the election, 15 in number, are marked as indicated below, where each line of figures running up and down the page represents the preferences of one of the 15 voters as expressed on his ballot.

A	2	2	2	1	4	2		4	5	2	1		2	1	
B	3		1	4	5	4	3	3	4	3	3	1		3	4
C	4	4		3	1	5	1	1	3	4	2	3	4	2	1
D	1	3	4	2	2	3	4	2	1	1	5	4	3	4	2
E	5	1	3		3	1	2	5	2		4	2	1		3

With these ballots cast, the Ware rules would elect E.   With the same ballots, the Spokane rules would elect A.   (With the same ballots, it may be noted in passing, the nonpreferential ballot still prevalent in this country would elect C.)   But a careful comparison of the ballots will show that the candidate who is unquestionably preferred by a majority of the voters, *as against any other of the candidates taken singly*, is D.   From a two-by-two comparison it appears that—

D defeats A singly .... 8 to 7

D defeats B singly .... 10 to 5

D defeats C singly .... 8 to 7

D defeats E singly .... 8 to 7

Well, then, do the Nanson rules elect D?   Let us carry them out and see.

First scrutiny, Nanson rules.

A	2	2	2	1	4	2	5	4	5	2	1	5	2	1	5=	43
B	3	5	1	4	5	4	3	3	4	3	3	1	5	3	4=	51
C	4	4	5	3	1	5	1	1	3	4	2	3	4	2	1=	43
D	1	3	4	2	2	3	4	2	1	1	5	4	3	4	2=	41
E	5	1	3	5	3	1	2	5	2	5	4	2	1	5	3=	47
																225

As the average is 45, and B and E are higher than the average, they are excluded and the ballots again examined.   The preferences appear as follows on the—

Second scrutiny, B and E excluded.

A	2	1	1	1	3	1	3	3	3	2	1	3	1	1	3=	29
C	[1]3	3	3	3	1	3	1	1	2	3	2	1	3	2	1=	32
D	1	2	2	2	2	2	2	2	1	1	3	2	2	3	2=	29
																90

The average is 30, and C is excluded because his total is above 30.

[1] The figure 3 appears here in place of the figure 4, which the person who cast this ballot actually put opposite the name of candidate C, because candidates B and E have now been eliminated and the figures used in this second count under the Nanson rules must be those that indicate the preferences of the voters *among the remaining candidates only.* It will be found that this table and the following one are made up in accordance with this principle.   It will be noticed, also, that a counting clerk could read off the figures of this table from the preceding table as fast as another clerk could write the figures in this table down.   To read them off conveniently, the reading clerk would have only to draw a line through the figures, indicating the preferences expressed by all the voters for candidates B and E.

The complete text of the Nanson rules is printed elsewhere in this issue of Equity.

Third scrutiny, C excluded.

A	2	1	1	1	2	1	2	2	2	2	1	2	1	1	2=23
D	1	2	2	2	1	2	1	1	1	1	2	1	2	2	1=22

A is excluded and D elected.

Fortunately the Nanson rules can give nothing but the same correct result in any case, for they cover fully the mathematical law that governs all cases possible.

So much for the correctness of the three methods of counting the ballots: The Ware and Spokane methods are fallible and the Nanson method infallible. We have now to compare the three methods in another respect, their relative ease of operation in elections of various sorts.

The Ware rules require the bringing together to the central electoral authorities either of all the ballots themselves or of a full transcript record of them in order that the particular ballots cast for a candidate who is eliminated may be made effective, each for the candidate marked on it as preferred by the voter among the candidates who can be helped by his vote. The Nanson rules make the same requirement in order that the Nanson provisions for the second and any necessary subsequent counts may be carried out. The Spokane rules require at the central electoral bureau neither the ballots themselves nor a full transcript record of them; all they require there is a record of the number of first-choice votes, the number of second-choice votes, the number of third-choice votes, etc., that each candidate received at each precinct. So far as this difference goes, therefore, the Ware and the Nanson rules are less acceptable, especially in the case of elections covering an extended territory such as an entire State, than the Spokane rules.

The work of actually counting the votes is somewhat greater, on the average, with the Nanson rules than with either the Ware or the Spokane. I say this for what it is worth, hastening, however, to add that the additional work required by the Nanson rules should, in my opinion, be regarded as negligible in comparison with the infallibility of the Nanson rules. On the average the work of counting under the Ware rules and that under the amended Spokane rules seem to be about the same.

In what cases then, if any, should each of the three sets of rules be used? On this point I can not pretend to speak for anyone besides myself.

The Nanson rules, without question, should be used whenever decisions are to be made in representative bodies or in assemblies of any sort; for in such cases there is no need of trying to avoid the trifling extra work required to make sure that the result will be correct. They should also be used whenever decisions are to be made at the polls unless the opposition to the extra work they require—which of course is slight in comparison with that involved in a second election—is insurmountable.

The Ware or the Spokane rules—the latter amended of course—should be used whenever decisions are to be made at the polls where the opposition to the extra work required by the Nanson rules is insurmountable. That opposition will naturally be strongest of course in cases where the territory covered by the election is not compact like that of a municipality, but extended like that of a State; and in such cases the rules in favor of which the Nanson rules will be

rejected will be likely to be the Spokane rules, which do not require the bringing together of the ballots for the completion of the count, rather than the Ware rules, which do make that requirement.

In many cases, therefore, the contest, as soon as the Nanson system is understood and appreciated, will probably be between that infallible system, which requires a little more work and the bringing together of the ballots, and the (amended) Spokane system, which does not require the bringing together of the ballots. The Ware rules, however, are worthy of support wherever the Nanson rules can not be adopted and the Ware rules happen to be preferred to the (amended) Spokane.

My putting of the (amended) Spokane rules on a par with the Ware thus is not in accordance, I know, with the views of some experts on "preferential voting"—prominent members of the American Proportional Representation League—who are at least as well qualified as I am to express an opinion on the point. No course is open to me, however, but to present the matter as I see it, and though the Ware rules seem to me to have one advantage over the amended Spokane, the latter have over the Ware two advantages which, taken together, seem to me to balance the one on the other side.

The advantage of the Ware rules is that they are similar to those for the counting of the ballots under the very best system of "proportional representation," as it is usually called; that is, of electing deliberative or decision-making bodies by unanimous constituency instead of by mere plurality or majority of a constituency. This similarity will be evident to the reader when he comes to the explanation in Part II of this article of the Hare system of proportional representation, for that is the best system of proportional representation, and the rules of counting under it are similar in method, though different in object, to those of the Ware system of majority voting. As we shall doubtless eventually adopt the Hare plan of electing representatives in deliberative bodies, the advantage of adopting a majority system under which the procedure in counting the ballots is similar is obviously considerable.

Of the two advantages of the amended Spokane over the Ware rules one has already been mentioned, the fact that neither the ballots themselves nor any but the simplest records of them need to be sent from the precincts to the central electoral authorities for the completion of the count. This practical advantage is of real importance in State-wide elections, and it will be thought by many to be of some importance in large cities. The other practical advantage of the amended Spokane rules is their extreme plausibility on being explained in the briefest way.

So far as liability to error in determining the will of the majority is concerned, the improved Spokane system is about on a par, in my opinion, with the Ware. Neither, as we have seen, is infallible; but, on the other hand, neither is likely to result in any serious misinterpretation of the majority's will. Under the Ware system it is surely improbable that a candidate desired by a majority, as against any other one candidate, will be dropped as the lowest of all at any stage of the process of counting, and it is certain that any candidate elected by the Ware system will have, if not an absolute majority as against every other one candidate, at least exceedingly strong support. Under the amended Spokane system also it is highly improbable that

a candidate desired by a majority, as against every other one candidate, will fail to receive a majority of first choices at the first count, a majority of firsts and seconds at the second count, a majority of firsts and seconds and thirds at the third count, and so on throughout all the counts made, and it is certain that any candidate elected by this system will have, if not an absolute majority as against every other one candidate, at least very nearly that.

IMPORTANCE OF MAJORITY VOTING AND ITS RELATION TO PROPORTIONAL REPRESENTATION.

The superiority of any one of these majority systems over our old plurality system is great, for one of them indicates the will of the majority infallibly by a single election, and the two others indicate that will more accurately by a single election than the old plurality system does by final election and primaries together. Any one of them makes primaries unnecessary. Any one of them makes running for office more attractive to men of the highest type. Any one of them allows the voter to express his own real will freely without fear of "throwing his vote away," for if the candidate of his first choice can not be elected his second or some lower preference will at once come into play to make his ballot effective in helping the candidate he likes best of those who can be helped by it. In this way any one of the systems conduces to freedom in expressing the will on the ballot and to justice in securing to that will, as expressed, its due weight in the making of the decision at stake. In short, for the making of decisions by the ballot, any one of the three systems may fairly be called, in contradistinction to our old system of plurality voting in two elections, democracy in voting instead of its mere semblance, effective voting instead of the mere casting of ballots that may count for nothing toward deciding the issue according to the voters' real will.

But whenever the object of voting—to come back to a point I made at the outset—is not to make a decision at all but to make up a body fit to make decisions in the name of all the voters—in other words, a representative or deliberative body—then majority voting, even by an infallible system, is only one degree less absurd and less disastrous to democracy than plurality voting itself. Indeed, the advantage of using a good preferential majority system instead of the old system (of the unchangeable vote, the two elections, and the plurality rule) is trifling in comparison with the disadvantage of using even the best of majority system when the object of the voting is the election of a representative body. For when that is the object, it is almost sure to be defeated, and the principles of democracy grossly violated, unless a system of voting be adopted by which no candidate can be elected to the body unless he is supported not merely by a majority but by approximately the whole of a constituency. And that brings us to the second part of this article.

PART II.

UNANIMOUS-CONSTITUENCY VOTING—"PROPORTIONAL," OR TRUE, REPRESENTATION.

The misrepresentation of the people in their legislatures is unnecessary. It is due to our custom, which will seem rediculous to our grandchildren, of defining the constituency of each member by an

arbitrary geographical line and then allowing a plurality of the voters within the designated area to elect the "representative." Such a method virtually disfranchises not only all who vote against the candidate elected, who frequently comprise from 40 to 60 per cent of the whole electorate, but also—to a less degree—those who voted for that candidate in the final election not because they preferred him to all others but only because they disliked him less than any of the others who had come through the primaries as officially recognized candidates. Thus our present system makes it certain that most of the ballots will be thrown away if marked for the voter's first choice, therefore discouraging the expression of his real will on the ballot, and it makes it probable that a large percentage of the ballots, even as marked, will be utterly ineffective. It is perfectly feasible, however, by changing the nature of the constituency from a unit according to geography to a unit according to will, and by allowing the voter to express his will on the ballot adequately instead of inadequately— that is, by expressing his second, third, and other preferences as well as his first, or by voting for a list of candidates instead of for only one— to make nearly every ballot effective in the make-up of the representative body. To be exact, at the municipal election of 1909 in Cape Town, South Africa, where our present system is still used, only 42 per cent of the votes cast were effective in electing members of the council, whereas at the elections of the same year in Johannesburg and Pretoria, where the Hare system of proportional representation was used, 96 per cent and 99 per cent, respectively, of the ballots cast were effective in electing members.

So much for the relative justice of the two systems from the individual voter's point of view. Now consider it from the point of view of the several political parties. In New Jersey in 1912 a congressional delegation [1] was chosen from the 12 districts of New Jersey in the proportion of 1 Republican to 11 Democrats. In round figures the situation was: Total vote, 335,000; Democratic, 168,000; Republican, 96,000; Progressive, 71,000. Percentage of Democratic vote, 50; of Republican, 29; of Progressive, 21. Voters virtually disfranchised, that is, those whose ballots did not have the slightest effect on the make-up of the delegation—Democrats, 13,000; Republicans, 82,000; Progressives, 71,000; total virtually disfranchised, nearly 50 per cent of the whole number. According to the ballots, as actually marked, there should have been elected 6 Democrats, 3 Republicans, and 3 Progressives; according to the rules of our present electoral system, there were declared elected 11 Democrats, 1 Republican, and no Progressive. How much the result was further vitiated by the fact that many of the voters did not dare to mark their ballots for their real first choice for Congress, for fear of throwing away their votes, nobody knows.

In the momentous British general elections of January, 1910—

there were 144 constituencies in which the successful member was returned by a majority of less than 500. Of these constituencies 69 seats were held by the Ministerialists [the Liberals, Irish Nationalists, and Labor Party men] and 75 by the Unionists [Conservatives]. The majorities were in some cases as low as 8, 10, and 14. The aggregate of the majorities in the Ministerialist constituencies amounted to 16,931, and had some 8,500 Liberals in these constituencies changed sides, the Ministerialist majority of 124 might have been annihilated. On the other hand, the Unionists held

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[1] On this point I select my examples from national instead of from State elections because national issues are more generally understood. This example is taken from an article entitled "Shall the people rule?" by John E. Eastmond in the Trend Magazine for February, 1913.

75 seats by an aggregate majority of 17,389, and had fortune favored the Ministerialists in these constituencies their majority would have been no less than 274. Such is the stability of the foundation on which the House of Commons rests, such the method to which we trust when it is necessary to consult the nation on grave national issues.[1]

The number of Socialist votes for Congressmen in 1908, relatively to the number cast for Congressmen by other parties, entitled the party to several members, but it elected only one. In 1912 the party, though it doubled its vote, did not elect a single Congressman.

If such virtual disfranchisement of a large percentage of the voters were necessary, it would be foolish to spend good printer's ink protesting against it; but it is quite unnecessary. There is no reason why nearly every voter in New Jersey should not have in the legislature a member for whom he voted and for whom he wanted to vote. And the legislature need not have many members either. All that is necessary is to get rid of the arbitrarily defined geographical constituency (for each member)—half or two-thirds of the voters in which, perhaps, vote against the member sent up by it and are therefore certainly misrepresented—a constituency defined as a group of voters united in wanting to be represented by a certain person and numerous enough to deserve a representative.

Before considering the means by which such a unanimous-constituency system of representation is carried out, consider the results of two of the recent parliamentary elections in Tasmania, where such a system—the Hare—has been in use for several years.

1912.

	Votes.	Seats actually obtained.	Seats in proportion to votes.
Labor	33,634	14	13.66
Nonlabor	40,252	16	16.34

1913.

	Votes.	Seats actually obtained.	Seats in proportion to votes.
Labor	30,896	14	14.14
Nonlabor	34,676	16	15.86

Surely John Stuart Mill's eloquent tribute to the Hare system in his Autobiography is not extravagant. He writes:

This great discovery, for it is no less, in the political art, inspired me * * * with new and more sanguine hopes respecting the future of human society—by freeing the form of political institutions toward which the whole civilized world is manifestly and irresistibly tending (i. e., democracy) from the chief part of what seemed to qualify, or render doubtful, its ultimate benefits. * * * I can understand that persons, otherwise intelligent, should, for want of sufficient examination, be repelled from Mr. Hare's plan by what they think the complex nature of its machinery. But anyone who does not feel the want which the scheme is intended to supply; anyone who throws it over as a mere intellectual subtlety or crochet, tending to no valuable purpose, and unworthy the attention of practical men, may be pronounced an incompetent statesman, unequal to the politics of the future.

Take a specific case. Suppose the legislature were to be composed of 25 members in a single chamber. (A second chamber is useless,

obviously, if the first one is made truly representative of the entire electorate.)

In such a case, under our present system, we should divide the State into 25 districts, in each of which one member would be elected by a plurality of the voters. By adopting one of the majority preferential systems explained in the first part of this article we might, of course, insure the election of each member by a majority of the voters of his district instead of by a mere plurality. But that would not help matters much; for even though every member were elected by a majority of the voters of his district, the number of the unrepresented or misrepresented in the whole State might still be very great—any number, indeed, up to half of all the voters.

But suppose we abandon the single-member geographical constituency altogether, substituting for it a constituency of approximately the same number of voters who are unanimous in desiring a certain person as representative. Then we shall be able to reflect truly in the legislature the interests and opinions, in other words the will of all the voters of the State. First throw the geographical districts together into one or more large districts. You may poll the whole State as one district, electing all 25 members at large on one ticket, or you may divide the State into two or three districts, each of which would elect as many members as its population entitled it to. For the purposes of explanation I shall suppose that we choose to divide the State into three large districts, of which one, let us say that in which Newark is situated, is to elect nine members, the others eight each. Now, how is each of the districts, for example that of Newark, to elect its members?

There are several types of proportional or unanimous-constituency representation. All are based on the fundamental principle that *if a large district is to send a certain number of members, say nine, to the legislature, each of the nine largest groups of voters who can unite on a candidate should be allowed to send one.* But this fundamental principle can be applied in various ways.

One way is to provide that the candidates be nominated in lists by the several parties, any group of voters who wish to act together for this purpose being considered a "party" for the particular election in question. (If party names are allowed on the ballots, some provision must be made, of course, by primaries or otherwise, for determining which group of petitioners is entitled to use any party name which two or more such groups may claim. If party names are not allowed on the ballots, this difficulty is altogether avoided, yet without in the least preventing any party or faction, old or new, from electing as many members as its voting strength entitled it to.) This is commonly called the "list system." It is used for the election of parliamentary chambers in Belgium, Finland, Switzerland (the Councils of about half the Cantons), Sweden, and Würtemberg.

Following are provisions suitable in a general way for the election of the group of nine members to be sent to the legislature by the Newark district that we have taken as an example:

LIST SYSTEM OF PROPORTIONAL REPRESENTATION.

NOMINATION AND ELECTION PROVISIONS.

SECTION 1. Nomination of candidates for the legislature in each district shall be by petition, signed by electors, who have signed no other petition to nominate any candidate for the legislature at the same election, to the number of ——. The petitions shall

include the domicile addresses of the candidates. Each such petition may nominate as many persons not nominated by any other petition, as there are seats to be filled from the district. Each petition shall be signed, filed, and verified in the manner prescribed by general law, shall contain the signed consent of each candidate, and shall be filed with the election authorities at least 20 days prior to the election.

SEC. 2. The several lists of candidates—all the persons nominated by one group of petitioners being considered one list—shall appear on the ballots, without party names or emblems, in the order in which they were filed with the election authorities. The names and domicile addresses of the candidates on each list shall be printed on the ballot in the alphabetical order of the surnames.

SEC. 3. The votes shall be taken on ballots used for the filling of no other offices. The form of the ballot shall be substantially as shown in table on following page.

SEC. 4. The total number of valid ballots for representative in the legislature cast in the district shall be divided by the number of representatives to be elected from the district, and the quotient shall be the "quota."

SEC. 5. The number of full quotas contained in the total number of valid ballots cast in the district for the candidates of a list shall be the number of candidates on said list to be declared elected on the first assignment of seats.

SEC. 6. After this first assignment of seats, the remaining seats, if any, shall be assigned as follows: The number of valid ballots for the candidates of each list shall be divided by the number of seats, plus one, already assigned to such list, and to the list showing the largest quotient shall be assigned one additional seat. This performance shall be repeated until the number of seats assigned shall be that to which the district is entitled.[1]

SEC. 7. The candidates to be declared elected from any list shall be those individually receiving the largest number of valid votes.

[Form of ballot.]

FOR MEMBERS OF THE LEGISLATURE.

DIRECTIONS TO VOTERS:
    Mark a cross (x) opposite the name of one candidate only for whom you want to vote. (If the candidate you vote for is found to be elected without your vote, or if he is found to have too few votes to be elected with it, your vote will be counted for some other candidate on the same list.)
    A ballot is spoilt if more than one name is marked. If you spoil this ballot, tear it across once, return it to the election officer in charge of the ballots, and get another from him.

CANDIDATES FOR THE LEGISLATURE.

*   *List 1.*   *List 2.*   *List 3.*

[Domicile address.] A..........	[Domicile address.] C..........	[Domicile address.] D..........
" " B..........	" " G..........	" " L..........
" " O..........	" " H..........	" " M..........
" " P..........	" " J..........	" " N..........
" " S..........	" " K..........	" " Q..........
" " T..........		" " U..........
" " V..........		
" " Y..........		

SEC. 8. A ballot marked for more than one candidate shall be set aside as invalid; but no ballot on which the voter has clearly voted for one and only one candidate shall be set aside as invalid because the mark is in a form other than that of a cross (X) or for any other merely technical reason.

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[1] The reasons for these provisions are explained below in connection with a concrete illustration. The provisions are essentially the same as those governing the assignment of seats to lists in the system of proportional representation used for parliamentary elections in Belgium.
    * The squares for the voters' cross would be at the right of the names, of course, in States in which custom would require such a change.

Sec. 9. To any vacancy that shall occur, otherwise than by the operation of the recall, in the delegation of representatives to the legislature from a district, the ———— [here name the proper election authorities] shall appoint, to fill out the unexpired term, that candidate from the list on which the vacating representative was nominated who of all the unelected candidates on that list received most valid votes.

Consider how these rules would work out in a concrete case. Suppose the Newark district, which is to elect nine of the twenty-five members of the legislature, polls valid votes as follows:

List 1.

Candidate A	20,000
Candidate B	30,000
Candidate O	2,000
Candidate P	26,000
Candidate S	600
Candidate T	20
Candidate V	15,000
Candidate Y	5,100
	98,720

List 2.

Candidate C	5,000
Candidate G	2,000
Candidate H	3,450
Candidate J	20,110
Candidate K	12,001
	42,561

List 3.

Candidate D	10,000
Candidate L	5,000
Candidate M	11,002
Candidate N	20,425
Candidate Q	30,204
Candidate U	1,104
	77,735

The ballots being marked as shown by these figures, the total vote of the district would be 219,016. The quota would be that number divided by 9, which is $24,335\frac{1}{9}$.

As that last number is fully contained in the vote of the first list four times, that list is given four seats on the first assignment. The four candidates on the first list to receive these seats are (1) Candidate B, (2) Candidate P, (3) Candidate A, and (4) Candidate V.

As the quota is fully contained once in the vote of the second list, that list is given one seat on the first assignment, the candidate receiving it being Candidate J.

As the quota is fully contained three times in the vote of the third list, that list is given three seats on the first assignment, the candidates receiving them being Candidates Q, N, and M.

Applying now the rule of section 6 above, we find that dividing 98,720 by 5 gives us 19,744; dividing 42,561 by 2 gives us $21,285\frac{1}{2}$; and dividing 77,735 by 4 gives us $19,433\frac{3}{4}$. We therefore assign the ninth seat to the second list, the candidate receiving it being Candidate K.

The method of determining to which lists the seats not filled by the first assignment shall be given may seem arbitrary, but in fact it is not. Of course, if the voters happened to divide into the three

groups on the lines of full ninths, that is, if the first list received
exactly four-ninths of the votes, the second list exactly two-ninths,
and the third list exactly three-ninths, the first assignment would
fill all the seats, and the constituency filling each one would be a
full, as well as unanimous, quota. But the voters can not be expected
to divide themselves into ninths so perfectly; and as that is the case,
the rules of the election system must provide for giving the seats
to the *nine largest groups that actually do form.* We can now see the
reason for dividing the total vote of the first list by 5, that of the
second list by 2, and that of the third list by 4 to determine to which
the ninth seat should be assigned. We divide the total vote of the
first list by 5 to find out *how large each group would be if five instead
of four were made out of the first list's vote.* We divide the total vote
of the second list by 2 to find out how large each group would be
if two groups instead of one were made out of that list's vote. And
after dividing the third list's vote by 4 for a similar reason, we
assign the next seat (the ninth) to that one of the three lists "which
shows the largest quotient," as the rules put it, in other words to
that one of them which, if it were assigned one more seat, would be
electing each of its members by the largest part of a full quota.

Compare the errors of this election with those of an election of
representatives under our present single-member geographical con-
stituency system. Under the latter the error involved in the election
of a member often amounts, as we have seen, to from 40 to 60 per
cent of all the voters of a constituency, and it would often amount
to nearly 50 per cent of them even if a majority preferential system
were substituted for our usual system of pluralities and primaries.
In the election we have examined, on the other hand, the error, in
the case of the election of each member, is only the difference between
the number of votes that elect him and a full quota. In the case of
Candidates B, P, A, and V, for example, the error is the difference
between 24,680 (the number of times that 4 goes into 98,720) and
$24,335\frac{1}{9}$, which is the full quota. In the case of candidates J and K
the error is the difference between $21,285\frac{1}{2}$ (the number of times that
2 goes into 42,561) and $24,335\frac{1}{9}$, the full quota. In the case of Can-
didates Q, N, and M the error is the difference between $25,911\frac{2}{3}$ (the
number of times that 3 goes into 77,735) and $24,335\frac{1}{9}$, the full quota.

It should be noticed that every member elected by this system is
elected by a constituency that may fairly be called unanimous.
Take the case of Candidate V. It is true, of course, that many of
the $21,285\frac{1}{2}$ votes by which Candidate V is elected were cast by voters
who preferred one of the other candidates, B, P, O, S, T, or Y. Yet
every one of those voters indicated, by marking candidates in the
first list after reading the "Directions to voters" at the top of the
ballot, that he wanted to help elect some other candidate in that list
if his vote could not be effective for the particular candidate he
marked. It may be objected that the list itself did not *precisely*
suit every one of the voters who decided to vote for some candidate
on it. That is true, but it must at least have nearly suited every
politically intelligent voter who supported it, for otherwise the
unsatisfied would have taken advantage of the opportunity, easily
afforded them by section 1 of the election provisions, to nominate one
or more other lists. Within the limits of the flexibility of a list or

party system, therefore, the constituency electing Candidate V— and the same may be said of any of the eight others elected—may be said to be unanimous.

The proportional system set forth above provides, therefore, a means by which at a single election the voters of a large district can form almost perfectly unanimous constituencies each one of which contains approximately the same number of voters that there would be in an entire single-member district under our present system. Under the proportional system explained, therefore, the delegation of members from one of the large districts—for example, that of Newark—would represent the voters of that part of the State almost perfectly; and as the same would be true also of the two other large districts of the State, the legislature as a whole would represent almost perfectly the voters of the State.

Besides the list system of proportional or true representation, there are two others equally worthy of our attention in this country at the present time.

One of these is the Hare system, which is advocated for the election of city councils and fully explained in Pamphlet No. 2,[1] of the American Proportional Representation League, which will be mailed by either secretary of the league to any address on receipt of 4 cents in stamps. This system is often called "the single transferable vote"; but that name is not altogether satisfactory, for in most other systems also, including the list system explained above, the vote is "single," each voter's ballot actually counting for only one candidate, and it is "transferable," though only within the limits of one list. A more accurate name for the Hare system would be *the unrestricted-preferences system,* for its distinguishing characteristic is that it allows each voter to indicate, unrestricted by any party or list lines, his personal preferences, as many or as few as he pleases, among all the candidates on the ballot whose names are printed in a single list, the rules for counting the ballots under the Hare system being suitable, of course, for making every ballot effective, so far as possible, according to the individual preferences expressed on it

This is the system in use for the election of the Parliament of Tasmania and the Senate of South Africa, and incorporated by special votes of the British Parliament in the "Home rule" bill for the election of the senate and the house proposed for Ireland. That it is the most flexible and perfect of all systems of voting for representatives is hardly open to question. It requires, however, for the carrying out of the transfers required to make wasted votes effective, the bringing together to a central place of all the ballots cast in the large district which elects several members. As this requirement will doubtless be felt by some people to be at present a somewhat serious obstacle to the introduction of this system in elections covering an extended territory, the list system just explained and the "schedule system," explained in the April (1913) Equity, are worthy of our careful attention now in this country, especially in respect to State and Federal elections, in which each district would be very extensive.

[1] For some slight amendments that should be made in the Hare rules as printed in that pamphlet and in the last issue of Equity, see an article elsewhere in the present issue.

Under the schedule plan the candidates' names are printed on the ballot in a single list, as under the Hare plan, instead of in several lists, as under the list plan. But under the schedule plan each candidate really stands for a list, for the distinguishing feature of the plan is that every ballot that can not help elect the candidate for whom it was cast is to be counted to help some other candidate on a list published before the election as that of the candidates who are to receive, in the order in which their names stand on the list, any votes cast for the candidate in question which can not help him either because he has a full quota without them or because he is found to have no chance of being elected with them.

The differences between the schedule plan and the list plan are these:

(1) The former lends itself to the Australian form of ballot, whereas the latter lends itself to the party-list form of ballot.

(2) The former offers the voter many lists, a different one for each candidate, without making the ballot physically cumbersome, whereas the latter either restricts the voter to a few lists or makes the ballot cumbersome. Neither plan, of course, makes the ballot "long" in the political sense of that word; for politically a ballot is "long" that is hard to vote so as to make the voter's will effective, and a ballot is "short" that is easy to vote so as to produce that result; and it is very easy for the voter to vote so as to make his will effective with either a schedule or a list plan ballot.

(3) The schedule plan allows a candidate's name to be on more than one list, whereas the list plan, unless the rules are made rather complicated, does not.

Either plan, if carried out with suitable rules, may be expected to give nearly perfect results. Either will elect a representative body incomparably more useful, because incomparably more truly representative of the voters, than those we have had in the past. To a legislature elected by either may safely be intrusted the power to select the chief administrative official of the State—not a governor, with veto powers, but a sort of State manager with purely administrative duties—from anywhere in the country or the world to serve indefinitely, on a professional basis, so long as he is satisfactory to the truly representative legislature and to the people. Either may be made the basis, therefore, of a form of State government at once truly democratic and highly efficient.

As for the election of the single-chambered council or commission by which our cities should be governed under the "manager plan," for that I have been advocating the Hare system because it gives the individual voter even greater freedom in the expression of his will than the list or the schedule system. Wherever, however, the Hare system is thought too hard to explain to the public, or the opposition to bringing together all the ballots of the city—or of one of the large districts, if the city is divided into such districts—is insurmountable, either the list or the schedule system is to be recommended, with confidence that either will give general satisfaction and make the excellent "manager plan," which for efficiency is certainly the best general plan of city government, truly democratic.

CONCLUSION.

To sum up a few of the points covered by this article, there is no place at all in a plan of government suited to modern conditions for either primary elections or plurality voting. When the object of the voting is to make a selection among more than two candidates for one nonrepresentative office, or to make a decision for one of more than two alternative measures or policies, the voting should be done by one of the majority systems explained in the first part of this article, preferably by the Nanson system, where the counting of the ballots by that system would not be seriously inconvenient. When the object of the voting is to make up a selection-making or decision-making body—that is, a deliberative, representative, legislative, policy-determining body—the voting should be done by a unanimous constituency or proportional system, such as the Hare, the list, or the schedule. In all majority voting the voter should be allowed to express his will as fully as he pleases. In the case of unanimous-constituency voting he should be allowed to express his personal preferences with the utmost freedom possible; in other words, the Hare system should be preferred to the list or the schedule except where public opinion is not sufficiently educated to demand the Hare. The marking of majority ballots should in all cases be by the figures 1, 2, etc.; that of unanimous-constituency ballots by the same method (in the case of the Hare system) or by a simple cross (in the case of the list or the schedule system). Finally, the representative body of a State or a city elected by a system insuring true representation should be given the power to select and to retain in office during its pleasure indefinitely, subject only to the application of the recall by the people where that institution is in use, a chief administrative official of professional experience and attainments.